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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/403,338	10/19/1999	SEINOSUKE HORIKI	2710/60471	7137

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COOPER & DUNHAM  
1185 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036

EXAMINER
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KRUER, KEVIN R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/24/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

A 215

# Office Action Summary

Application No.

09/403,338

Applicant(s)

HORIKI ET AL.

Examiner

Kevin R Kruer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) 9,10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 5, 2003 has been entered.

***Oath/Declaration***

2. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed at the WPO on February 19, 1999. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath or declaration does not acknowledge the filing of the PCT application. A new oath or declaration is required in the body of which the present application should be identified by application number and filing date.

***Specification***

3. The abstract of the disclosure is objected to because it is longer than one paragraph in length. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "sufficiently sulfomethylated and/or sulfimethylated" in claim 1 is a relative term which renders the claim indefinite. The term "sufficiently" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "good moldability" in claim 1 is a relative term which renders the claim indefinite. The term "good" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "long storage life" in claim 1 is a relative term which renders the claim indefinite. The term "long" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "good heat resistance" in claim 1 is a relative term which renders the claim indefinite. The term "good" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870, JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Taylor (US 4,292,105). Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may

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be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 does not teach that the resin should be advanced to the B-stage of curing. However, Taylor teaches a fibrous textile impregnated with a thermosetting polymer (col 1, lines 10+). Taylor teaches that the polymerization of the thermosetting polymer should be advanced to the B-stage, because the impregnated material can be stored for a reasonable length of time in that state (col 1, lines 18+). Thus, it would have been obvious to one of ordinary skill in the art to cure the resins taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 to the B-stage after impregnation in order to obtain a product that could be stored for a reasonable length of time.

8. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870, JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Benzinger (US 3,617,613). Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde

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donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 do not teach that the resin should be advanced to the B-stage of curing. However, Benzinger teaches a glass fiber sheet impregnated with a thermosetting resin (abstract). Benzinger teaches that the flow rate of a thermosetting resin can be controlled by polymerizing the polymer to the B stage. Thus, it would have been obvious to one of ordinary skill in the art to cure the resins

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taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 to the B stage in order to control the resin's flow.

9. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870, JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609), in view of Casadevall (US 3,960,626). Yuka'329 teaches a fibrous material impregnated with a sulfomethylated compound of a condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract).

Yuka'870 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'192 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers, wood chips, and nonwoven fabrics, or as an impregnate or adhesive (page 1 of translation).

Yuka'609 teaches a sulfomethylated condensation polymer. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The



phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation).

Yuka '329, Yuka'870, Yuka'192, and Yuka'609 do not teach that the resin should be cured to the B stage. However, Casadevall teaches that the handlability of fiber impregnated with a phenolic resin can be improved by curing to the B stage. Thus, it would have been obvious to one of ordinary skill in the art to cure the resins taught in Yuka '329, Yuka'870, Yuka'192, and Yuka'609 in order to improve their handlability.

10. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franz et al. (US 3,922,459) in view of JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870), JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609). Franz teaches a web of fibers impregnated (abstract) with a phenol formaldehyde resin (col 8, line 51). A metal foil may be glued to one or both sides of the impregnated fibers (col 8, lines 32-36).

Franz does not teach that the fibers should be impregnated with the claimed sulfomethylated or sulfomethylated phenolic resin. However, Yuka'329, Yuka'870, Yuka'192, and Yuka'609 each individually teach sulfomethylated condensation polymers. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation). Such resins have better pot life and better water solubility than phenol formaldehyde resins. Therefore, it would have been obvious to utilize the sulfomethylated phenolic condensation polymers taught in Yuka'329, Yuka'870, Yuka'192, and Yuka'609 in place of the phenolic formaldehyde resin taught in Franz

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because such sulfomethylated resins have better pot life and water solubility-thus making processing easier.

11. Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (US 3,619,342) in view of JP06270329 (herein referred to as Yuka'329), JP07195870 (herein referred to as Yuka'870), JP08121092 (herein referred to as Yuka'192), or JP05204609 (herein referred to as Yuka'609). Burke teaches a corrugated fiberboard which resists deterioration in strength when in the presence of water. The board comprises liner members bonded to either side of a corrugate medium that has been treated with phenol aldehyde resole resin (abstract). The phenol aldehyde resole should have a water solubility such that an aqueous solution comprising 55wt% resin solids can be prepared (col 2, line 75).

Burke does not teach that the medium should be impregnated with the claimed sulfomethylated or sulfimethylated phenolic resin. However, Yuka'329, Yuka'870, Yuka'192, and Yuka'609 each individually teach sulfomethylated condensation polymers. The condensation polymer comprises a phenol and aldehyde and/or aldehyde donor(abstract). The phenol aldehyde resin is then cured with an amine compound (abstract). The resin may be used as a binder in molding fibers (page 1 of translation). Such resins have better pot life and better water solubility than phenol formaldehyde resins. Therefore, it would have been obvious to utilize the sulfomethylated phenolic condensation polymers taught in Yuka'329, Yuka'870, Yuka'192, and Yuka'609 in place of the phenolic formaldehyde resin taught in Burke

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because such sulfomethylated resins have better water solubility, thus making it easy to prepare an aqueous solution comprising 55wt% resin solids.

### ***Response to Arguments***

Applicant's arguments filed September 5, 2003 have been fully considered but they are not persuasive. Applicant argues that the purpose of the invention is to improve the moldability, storage life, and heat resistance of a phenolic resin by sulfomethylating or sulfimethlating the resin. However, the Yuka references teach that the sulfomethylation or sulfimethylation of a phenolic resin improves the resins moldability, storage life, and heat resistance. Thus, Applicant's invention would have been obvious in view of the teachings of Yuka. Furthermore, the data in the specification and Applicant's response is not considered unexpected since the Yuka references teach that phenolic resins have a longer storage life.

Thus, Applicant's arguments are not persuasive.

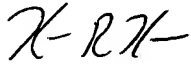
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R. Kruer whose telephone number is (703) 305-0025. The examiner can normally be reached on Monday-Friday from 7:00 a.m. to 4:00 p.m.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703)305-5436.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.



Kevin R. Kruer  
Patent Examiner



Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700